North American Finches.[1] — This work, when complete, will of course be the standard book of reference on North American birds. It represents the matured views of our foremost ornithologist and is remarkable for the clear and terse, yet ample, manner in which the facts are presented. It includes not merely the birds of the United States and Canada, but also those of Central America, Mexico, the West Indies, and the Galapagos Islands. A full bibliography is given for every species and subspecies; and there are numerous measurements of specimens from different localities, indicating slightly variant forms not designated by special names.

The present volume includes the sparrows and finches. Excluding the Galapagos genera, and three species introduced from Europe, we have 186 species, to which are added 165 subspecies, making 351 named forms in all. The species may be divided thus:

1. Monotypic species in monotypic genera . . . . . 13.
2. Polytypic species in monotypic genera . . . . . 8.
3. Monotypic species in polytypic genera . . . . . 106.
4. Polytypic species in polytypic genera . . . . . 59.

Total monotypic species, 119; polytypic species, 67.

A monotypic genus is one which has only a single species; a monotypic species is one having only one form, *i.e.*, without subspecies.

The monotypic genera of the first group are distributed thus:

1. Great plains of North America: Rhynchophanes, Calamospiza, Centronyx.
2. Mountains of Western North America: Oreospiza.
3. Mexico and Central America: Plagiospiza, Pselliophorus, Pezopetes, Acanthidops, Rhodothraupis.
4. Cocos I., off Bay of Panama: Cocornis.
5. West Indies: Melanospiza (St. Lucia), Loxipasser (Jamaica), Loximitris (Haiti).

It is significant and interesting that there are no monotypic genera with monotypic species east of the great plains; or, excepting Oreospiza, west of them to the Pacific. The conditions in the west, which have produced so many distinct species and subspecies, have not yet given us, in the groups under consideration, new generic types. In other words, the evolution of the peculiar western genera antedates the comparatively recent development of local specific forms. This agrees very well with the results obtained from the study of other groups, *e.g.*, the flowering plants. We find numerous closely allied

[1] Ridgway, Robert. The Birds of North and Middle America, Part I, *Bull. No. 50. U.S. Nat. Mus.*, 1901. 715 pp., 20 pls.

species belonging to old and widespread genera, pointing to a recent period of plasticity of types, not going so far, however, as to affect the genera. For the development of new genera, environmental conditions of great stability and complexity, such as exist to-day in the tropics, seem to be most favorable; and it may very well be that most of the distinctive North American genera had their origin at a time long previous to the glacial period, when such conditions more nearly prevailed on this continent. The changeable conditions of recent periods, while extremely favorable to the production of new subspecies or even species, might from their very instability be inimical to the development of new genera.

It is interesting to observe how much more plastic some species are than others. Thus, in the genus Melospiza, *M. lincolnii* and *M. georgiana*, though very widespread, remain monotypic, while *M. cinerea* has split up into no less than twenty-one subspecific forms, many of very restricted distribution.

A very interesting discussion is given of the Galapagos genus Geospiza. This includes twenty-seven forms, the extremes of which are so distinct that they used to be assigned to different genera; yet the gradation from one to the other is almost complete. Messrs. Rothschild and Hartert proposed to regard a number of these forms as subspecies of the others; but Mr. Ridgway urges that there is really no alternative between regarding them all as forms of one species and treating them all as specific units. Since the former course is one that would commend itself to no one, the latter is adopted, with the result that we have a series of "species" far more intimately related than the forms usually classed in this category. We feel much as we might feel if suddenly confronted with the whole series of extinct types connecting our very "good" genera and species of the present day. Were the Galapagos less isolated, and the competition with other groups of birds more severe, no doubt several of the links would be conveniently missing by this time, and we should not have occasion to dispute over the status of the remainder.

Many endemic forms are recorded from the islands of the California coast and the West Indies. These are in most cases regarded as subspecies only; though, in the inevitable absence of intermediate series occupying the intervening territory (this being water), it would seem more logical to treat them as distinct species. We seem to need a new term to express these allied insular forms; but since their continuity with the parent species is assuredly broken, I would rather write

the names as binomials; *e.g.*, *Pyrrhulagra ridgwayi* for *P. noctis ridgwayi* Cory; *Melospiza graminea* for *M. cinerea graminea* (Townsend).

A very singular case is that of *Euetheia bicolor omissa*, occupying most of the West Indian Islands, but replaced in Jamaica, Haiti, Barbados, and Grenada by *E. b. marchii*. Are we to suppose that the latter once occupied the whole chain of islands but has given way to the former wherever it appeared upon the scene?

Two statements in the work seem to call for special comment. One is as follows: "The necessity for beginning this work with the highest instead of the lowest forms is to be regretted, and may be explained by briefly stating that owing to inadequate facilities for properly arranging the larger birds in the National Museum collection these are not available for study, and consequently it became necessary either to begin with the smaller birds, already systematically arranged, or else postpone the work indefinitely."

That such a statement should be made regarding our National Museum may well make us feel ashamed. Is this country too poor to provide facilities for such a man as Mr. Ridgway, who returns to it a thousandfold the small means it has placed at his disposal? Are we so blind that we cannot see that scientific knowledge is more than the equivalent of money; is not merely convertible into that medium, but is in itself far more nearly an end of national existence, since it adds to the worth of the individual himself, and not merely to the worth of that which is temporarily attached to him?

The other statement referred to is quite different. We are told: "There are two essentially different kinds of ornithology: *systematic*, or *scientific*, and *popular*. The former deals with the structure and classification of birds, their synonymies and technical descriptions. The latter treats of their habits, songs, nesting, and other facts pertaining to their life-histories." The present writer has to confess that this statement quite took his breath away. The study of living birds, then, is "popular," but the study of their mortal remains, stuffed with cotton and provided with tags, or occasionally, perhaps, immersed in alcohol, — this is "scientific." It is hardly possible that Mr. Ridgway could have intended his words to be taken literally. No one could deny that Mr. Ridgway's work on museum material is in the highest degree scientific, and we may freely admit that nine-tenths of what is written on the habits, nesting, etc., of birds is much less so; but it surely does not follow that the story of life histories is in the least degree less scientific, in itself, than any other branch of ornithology. One might as well say that the study of alcoholic

brains is scientific (because the literature of that subject is so), but the study of mental processes is popular, or non-scientific, for the reason that we have a mass of trivial literature on psychology.

T. D. A. C.

Notes on Fishes. — In a recent visit to San Diego the writer saw in the possession of an animal artist, Miss Annie Andrews, good paintings of the threadfin, *Polydactylus approximans*, and the sea bonito, *Gymnosarda pelamis*. The threadfin is common about Mazatlan, but had never been taken in the limits of the United States. It was once described as *Polynemus californiensis* by Thominot, from "California"; but that California which stretches from Rogue River to Cape San Lucas is zoölogically very indefinite, comprising three distinct marine faunas. The oceanic bonito is common at Honolulu and in Japan, and was once before noticed by Eigenmann at San Diego.

In the *Scientific American* for December 21 Mr. C. F. Holder publishes a photograph of *Luvarus imperialis*, a large and rare fish of the Mediterranean, lately taken at Avalon on Santa Catalina Island, off the coast of California. There is no question as to the identity of the species with the genus Luvarus, and no specific difference appears in Mr. Holder's photograph, a copy of which the writer has seen.

Mr. Holder also reports that he has seen two specimens of the oarfish, *Regalecus* (*russelli?*), taken in Avalon Bay. One of these, two feet long, was examined by him while alive. "Its topknot," Mr. Holder says, "was a vivid or scarlet mass of plumes. The dorsal spines, which merged into a long dorsal fin, extended to the tail. The color of the body was a brilliant silver sheen, splashed with equally vivid black zebra-like stripes." Mr. Holder was unable to obtain either specimen, the finders insisting on placing them on a piece of board to be dried in the sun as "curios." In this condition the water soon evaporated, and practically nothing was left.

In *Science* for Dec. 13, 1901, Gill and Townsend give an account of a large fish about five feet in length, dredged by the *Albatross* at a depth of 1050 fathoms off the Chonos Archipelago in Chile. By some accident the huge specimen was cast overboard, and the description is made from a photograph. The fish is of trachinoid affinities and is perhaps one of the Percophidæ. The name given it is *Macrias amissus*. The recent explorations of Dollo show that